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BUREAU OF SHIPS GROUP TECHNICAL INSPECTION REPORT.

CONFIDENTIAL

Classification (Declassified) (Changed to
By Authority of Joint Chiefs of Staff (Action 15 Apr 49)
Date 1 May 51

⑥ OPERATION CROSSROADS.
U.S.S. LST 661.

TEST BAKER

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of the
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SPECIAL WEAPONS PROJECT

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Director
Defense Atomic Support Agency
Washington, D. C. 20301

⑪ 1947,

⑫ 34p.

⑭ XRD-141

OPERATION CROSSROADS

DIRECTOR OF SHIP MATERIAL DDC

JOINT TASK FORCE ONE

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1 JAN 1965

GROUP 3 1 JAN 1985
Downgraded at 12 year intervals;
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BUREAU OF SHIPS GROUP
TECHNICAL INSPECTION REPORT

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By Authority of Joint Chiefs of Staff (Action 15 Apr 49)
By [Signature] Date 1 May 51

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Defense Atomic Support Agency
Washington, D. C. 20301

APPROVED:

CONFIDENTIAL X. Forest,
Captain, U.S.N.

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DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE
ESPIONAGE LAWS, TITLE 18, U. S. C., SECTION 793 AND 794.
The transmission or the revelation of its contents in any
manner to an unauthorized person is prohibited by law." USS LST 661

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1 JAN 1950

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SECRET

USS LST 661

U.S.S. LST 661

SHIP CHARACTERISTICS

Building Yard: American Bridge Co., Ambridge, Penna.

Commissioned: 28 April 1944.

HULL

Length Overall: 328 feet 0 inches.

Length on Waterline: 316 feet 0 inches

Beam (extreme): 50 feet 0 inches.

Drafts at time of test: Fwd. 5 feet 9 inches.

Aft. 11 feet 8 inches.

Limiting displacement: 4,080 tons.

Displacement at time of test: 3,278 tons.

MAIN PROPULSION PLANT

Main Engines: Two General Motors Diesels, type:
12 - 567 A. One per main shaft.

Reduction Gears: "Falk" - Single reduction. One
per engine.

Propellers: Two are installed in ship.

Main Shafts: Two are installed in ship.

Ships Service Generators: Three - 100 KW.- 230
volts, D. C. units are installed.

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USS LST 661

TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

(a) Drafts after test, list, general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

(b) Structural Damage.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

There was no structural damage.

(c) Other damage.

HULL

Not observed.

MACHINERY

None.

ELECTRICAL

There was no damage to any electrical equipment.

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II. Forces Evidenced and Effects Noted.

(a) Heat.

HULL

None

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of heat in way of electrical equipment.

(b) Fires and Explosions.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

There were no fires or explosions in way of electrical equipment.

(c) Shock.

HULL

None.

MACHINERY

No evidence.

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ELECTRICAL

There was no evidence of shock in way of electrical equipment.

(d) Pressure.

HULL

A temporary cargo hatch cover was installed to replace that burned in Test A. The canvas of the cover is disarranged and the wood is dislodged. This is apparently the result of blast or falling water.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of pressure in way of electrical equipment.

(e) Effects peculiar to the Atomic Bomb.

HULL

None.

MACHINERY

None, except radioactivity.

ELECTRICAL

Radioactivity in way of exposed equipment was the only effect noted peculiar to the Atom Bomb.

III. Results of Test on Target.

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USS LST 661

- (a) Effect on machinery, electrical, and ship control.

HULL

Not observed.

MACHINERY

The test had no effect on machinery, as far as could be determined by visual inspection. No machinery on this vessel was operated after Test B because of radioactivity, which was fairly high when the ship was inspected 18 days after Test B.

ELECTRICAL

No damage was apparent to electrical machinery or ship control.

- (b) Effect on gunnery and fire control.

HULL

Not observed.

MACHINERY

No comment.

ELECTRICAL

No electrical damage affected gunnery or fire control.

- (c) Effect on watertight integrity and stability.

HULL

None.

MACHINERY

No comment.

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ELECTRICAL

No electrical damage affected watertight integrity or stability.

- (d) Effect on personnel and habitability.

HULL

None.

MACHINERY

None, except radioactivity.

ELECTRICAL

No electrical damage affected personnel or habitability.

- (e) Effect on fighting efficiency.

HULL

The only effect on fighting efficiency would be that resulting from radiological contamination.

MACHINERY

None, except for possible effects of radioactivity. As the machinery was fully operable, the ship could probably have left the contaminated area without being seriously affected.

ELECTRICAL

No electrical damage affected the fighting efficiency of the vessel.

IV. Summary of Observer's Impressions and Conclusions.

HULL

No comment.

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USS LST 661

MACHINERY

LST 661 was outside the range of physical damage from the explosion in Test B.

ELECTRICAL

No damage was evident on any electrical equipment due to Test B. It appears that present electrical designs have sufficient shock resistance to withstand the effects of the Atom Bomb under conditions existing on this vessel during Test B.

V. Preliminary Recommendations.

HULL

None.

MACHINERY

None.

ELECTRICAL

None.

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USS LST 661

TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

- (b) Structural Damage.

None.

- (c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

- (a) Heat.

None

- (b) Fires and Explosions.

None.

- (c) Shock.

None.

- (d) Pressure.

A temporary cargo hatch cover was installed to replace that burned in Test A. The canvas of the cover is disarranged

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USS LST-661

and the wood is dislodged. This is apparently the result of blast or falling water.

(e) Effects peculiar to the Atom Bomb.

None.

III. Effects of Damage.

(a) Effect on machinery, electrical, and ship control.

Not observed.

(b) Effect on gunnery and fire control.

Not observed.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

None.

(e) Effect on fighting efficiency.

The only effect on fighting efficiency would be that resulting from radiological contamination.

IV. General Summary of Observers' Impressions and Conclusions.

No comment.

V. Preliminary General or Specific Recommendations of Inspection Group.

None.

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USS LST661

VI. Instructions for loading the vessel specified the following:

ITEM	LOADING
Fuel oil	
Diesel oil	50 tons
Ammunition	
Potable and reserve feed water	95%
Salt water ballast	95%

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the ship's force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's Force" issued by the Director of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

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DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

The temporary closure over the cargo hatch is dislodged. There is no other damage. General views of the ship are on pages 28 and 29.

B. Superstructure.

No damage.

C. Turrets, Guns, and Directors.

No damage.

D. Torpedo Mounts, Depth Charge Gear.

Not applicable.

E. Weather Deck.

The temporary closure over the cargo hatch is dislodged. There is no other damage.

F. Exterior Hull.

No damage.

G. Interior Compartments (above w.l.).

No damage.

H. Armor Decks and Miscellaneous Armor.

Not applicable.

I. Interior Compartments (below w.l.).

No damage.

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J. Underwater Hull.
No damage.

K. Tanks.
No damage.

L. Flooding.
None.

M. Ventilation.
No damage.

N. Ship Control.
No damage.

O. Fire Control.
No damage.

P. Ammunition Behavior.
No damage.

Q. Ammunition Handling.
No damage.

R. Strength.
No damage.

S. Miscellaneous.
No comment.

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TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding sources.

No data taken by machinery group.

(b) Structural damage.

No comment.

(c) Other damage.

None.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

(d) Pressure.

No evidence.

(e) Effects apparently peculiar to the atom bomb.

None, except radioactivity.

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USS LST 661

III. Effects of Damage.

(a) Effect on machinery and ship control.

The test had no effect on machinery, as far as could be determined by visual inspection. No machinery on this vessel was operated after Test B, because of radioactivity, which was fairly high when the ship was inspected 18 days after Test B.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

None, except radioactivity.

(e) Total effect on fighting efficiency.

None except for possible effects of radioactivity. As the machinery was fully operable, the ship could probably have left the contaminated area without being seriously affected.

IV. General Summary.

LST 661 was outside the range of physical damage from the explosion in Test B.

V. Preliminary Recommendations.

None.

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USS LST 661

DETAILED DESCRIPTION OF MACHINERY DAMAGE

A. General Description of Machinery Damage.

(a) Overall condition.

The overall condition of the machinery was not changed by Test B.

(b) Areas of major damage.

None.

(c) Primary cause of damage in each area of major damage.

Not Applicable.

(d) Effect of target test on overall operation of machinery plant.

Test B had no effect on operation of the machinery as far as can be determined by visual inspection. No machinery on this vessel was operated after Test B.

B. Boilers.

No apparent damage.

C. Blowers.

No apparent damage.

D. Fuel Oil Equipment.

No apparent damage.

E. Boiler Feedwater Equipment.

No apparent damage.

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USS LST 661

No apparent damage.

G. Reduction Gears.

No apparent damage.

H. Shafting and Bearings.

No apparent damage.

I. Lubrication System.

No apparent damage.

J. Condensers and Air Ejectors.

Not Applicable.

K. Pumps.

No apparent damage.

L. Auxiliary Generators (Turbines and Gears).

Not Applicable.

M. Propellers.

Not inspected. The propellers could not be examined from the surface of the water. There is no reason to believe that they were damaged.

N. Distilling Plant.

No apparent damage.

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USS LST 661

O. Refrigeration Plant.

No apparent damage.

P. Winches, Windlasses, and Capstans.

No apparent damage.

Q. Steering Engine.

No apparent damage.

R. Elevators, Ammunition Hoists, Etc..

No apparent damage.

S. Ventilation (Machinery).

No apparent damage.

T. Compressed Air Plant.

No apparent damage.

U. Diesels (Generators and Boats).

No apparent damage.

V. Piping Systems.

No apparent damage.

W. Miscellaneous.

No apparent damage.

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USS LST 661

TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

1. Drafts and list were the same as before the test.

2. There was no flooding.

- (b) Structural damage.

There was no structural damage.

- (c) Other damage.

There was no damage to any electrical equipment.

II. Forces Evident and Effects Noted.

- (a) Heat.

There was no evidence of heat in way of electrical equipment.

- (b) Fires and explosions.

There were no fires or explosions in way of electrical equipment.

- (c) Shock.

There was no evidence of shock in way of electrical equipment.

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LST 661

There was no evidence of pressure in way of electrical equipment.

(e) Effects peculiar to the Atom Bomb.

Radioactivity in way of exposed equipment was the only effect noted peculiar to the Atom Bomb.

III. Effects of Damage.

(a) Effect on electrical machinery and ship control.

No damage was apparent to electrical machinery or ship control.

(b) Effect on gunnery and fire control.

No electrical damage affected gunnery or fire control.

(c) Effect on watertight integrity and stability.

No electrical damage affected watertight integrity or stability.

(d) Effect on personnel and habitability.

No electrical damage affected personnel or habitability.

(e) Effect on fighting efficiency.

No electrical damage affected the fighting efficiency of the vessel.

IV. General Summary of Observers Impressions.

No damage was evident on any electrical equipment due to test Baker. It appears that present electrical designs have

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LST 661

sufficient shock resistance to withstand the effects of the Atom Bomb under conditions existing on this vessel during Test.

V. Recommendations.

None.

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LST 661

A. General Description of Electrical Damage.

(a) Overall condition.

The overall condition of the electric plant is the same as before the test.

(b) Areas of major damage.

None.

(c) Primary causes of damage in each area of major damage.

None.

(d) Effect of target test on overall operation of electric plant.

1. Ship's service generator plant: No effect.
2. Engine and boiler auxiliaries: No effect.
3. Electric propulsion: Not applicable.
4. Communications: No effect.
5. Fire control circuits: No effect.
6. Ventilation: No effect.
7. Lighting: No effect.

(e) Types of equipment most affected.

None.

B. Electric Propulsion Rotating Equipment.

Not applicable.

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LST 661

C. Electric Propulsion Control Equipment.

Not applicable.

D. Ship's Service Generators.

No damage.

E. Emergency Generators.

Not applicable.

F. Switchboards, Distribution and Transfer Panels.

No damage.

G. Wiring, Wiring Equipment and Wireways.

No damage.

H. Transformers.

No damage.

I. Submarine Propelling Batteries.

Not applicable.

J. Portable Batteries.

No damage.

K. Motors, Motor Generator Sets and Motor Controllers.

No damage.

L. Lighting Equipment.

No damage.

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No damage.

N. Degaussing Equipment.

No damage.

O. Gyro Compass Equipment.

No damage.

P. Sound Powered Telephones.

No damage.

Q. Ship's Service Telephones.

Not applicable.

R. Announcing Systems.

No damage.

S. Telegraphs.

No damage.

T. Indicating Systems.

No damage.

U. I. C. and A. C. O. Switchboards.

Not applicable.

V. F. C. Switchboards.

Not applicable.

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LST 661

SECTION IV

PHOTOGRAPHS

TEST BAKER

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USS LST 661



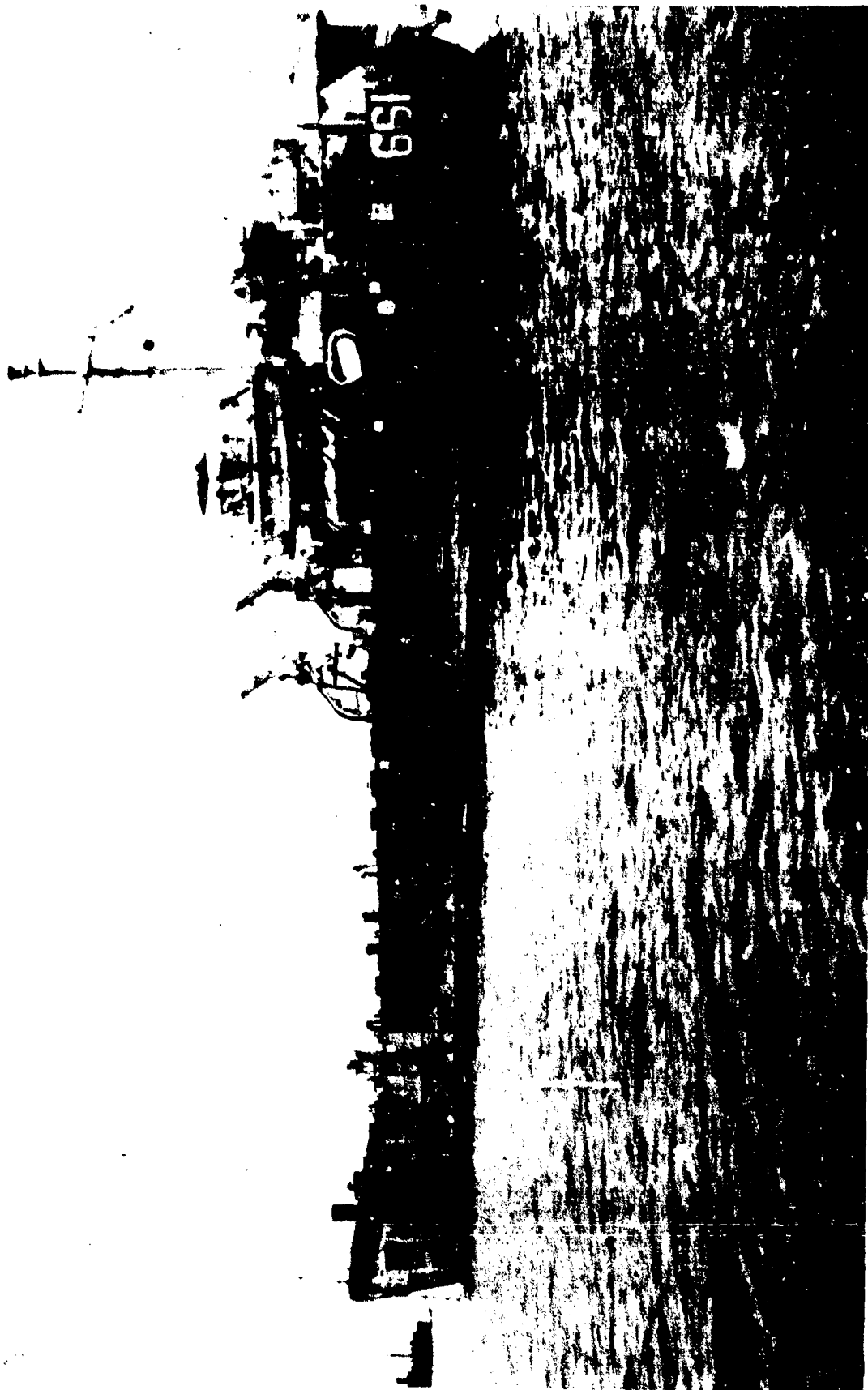
AB-CR-227-289-141. View from off starboard bow after Test B.

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AB-CR-227-289-145. View from off port quarter after Test B.

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APPENDIX

COMMANDING OFFICERS REPORT

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USS LST 661

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COMMANDING OFFICERS REPORT

REPORT # 5

SECTION I

Initial inspection of the LST 661 was accomplished on
13 August 1946.

No Material damage was found or evident thereof which
was caused by Test B.

No equipment was operated or energized.

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USS LST 661



Defense Special Weapons Agency
6801 Telegraph Road
Alexandria, Virginia 22310-3398

TRC

18 April 1997

MEMORANDUM FOR DEFENSE TECHNICAL INFORMATION CENTER
ATTENTION: OMI/Mr. William Bush (Security)

SUBJECT: Declassification of Reports

The Defense Special Weapons Agency has declassified the following reports:

✓AD-366588 4	XRD-203-Section 12✓
AD-366589✓	XRD-200-Section 9
AD-366590✓	XRD-204-Section 13
AD-366591✓	XRD-183
✓AD-366586 X	XRD-201-Section 10✓
✓AD-367487 4	XRD-131-Volume 2✓
✓AD-367516 4	XRD- 1 143✓
✓AD-367493 4	XRD-142✓
AD-801410L✓	XRD-138
AD-376831L✓	XRD-83
AD-366759✓	XRD-80
✓AD-376830L 4	XRD-79✓
✓AD-376828L 4	XRD-76✓
✓AD-367464 X	XRD-106✓
AD-801404L✓	XRD-105-Volume 1
✓AD-367459 X	XRD-100✓

TRC

18 April 1997

Subject: Declassification of Reports

AD-367517 ✕	XRD-141 ✓
AD-366762 ✓	XRD-84
AD-366760 ✓	XRD-81
AD-366761 ✓	XRD-82
AD-367501 ✓	XRD-158-Volume 1
AD-367507L ✓	XRD-152-Volume 4
AD-367495 ✕	XRD-184 ✓
AD-367485 ✕	XRD-129 ✓
AD-367484 ✕	XRD-128 ✓
AD-367483 ✕	XRD-127 ✓
AD-367482 ✕	XRD-126 ✓
AD-367488 ✓	XRD-132
AD-367480 ✕	XRD-124 ✓
AD-801409L ✓	XRD-135
AD-367490 ✕	XRD-136 ✓
AD-367492 ✕	XRD-137 ✓
AD-801411L ✓	XRD-139
AD-367518 ✕	XRD-140 ✓
AD-367515 ✓	XRD-144
AD-367514 ✓	XRD-145
AD-367468 ✕	XRD-110-Volume 2 ✓
AD-367513 ✓	XRD-146
AD-367497 ✕	XRD-162 ✓

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18 April 1997

Subject: Declassification of Reports

AD-801406L ✓ XRD-114.

In addition, all of the cited reports are now **approved for public release; distribution statement "A" now applies.**

Ardith Jarrett
ARDITH JARRETT
Chief, Technical Resource Center